UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/750,524	12/28/2000	Geoffrey W. Peters	INTL-0428-US (P9134)	6671

7590 06/17/2004	**EXAMINER**
Timothy N. Trop	TABATABAI, ABOLFAZL
TROP, PRUNER & HU, P.C.	

ART UNIT	PAPER NUMBER
2625	

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8554 KATY FWY
HOUSTON, TX 77024-1805

DATE MAILED: 06/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>05 March 2004</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4,6-11 and 13-30* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,6-11 and 13-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *July 19, 2001* is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

Claim Rejections - 35 USC § 112

1.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly
> claiming the subject matter which the applicant regards as his invention.

2.   Claims 1-4, 6-11 and 13 are recite the limitation " the flesh color" and " the

captured video" in line 4 of claim 1, and line 5 of claim 8. There is insufficient

antecedent basis for this limitation in the claims.

Response to Amendments/Arguments

3.   Applicant's arguments, see (page 6), March 5, 2004, with respect to the

rejection(s) of claims 1-4, 6-11 and 13-17 under Sotoda et al (U S 5,835,641) and Doi et

al (US 6,456,728 B1) have been fully considered and are persuasive. Therefore, the

rejection has been withdrawn. However, upon further consideration, a new ground(s) of

rejection is made in view of Edwards et al (U S 6,545,706 B1); Abdel-Mottaleb et al (U S

6,263,113 B1); Ippolito et al (U S 6,072,522); and Uehara et al (U S 4,961,177).

4.   Applicant argues in essence that the prior art does not teach or suggest

determining a user's position from captured image of the speaker. Examiner disagrees

and indicates that Uehara teaches determining a user's position from captured image of

the speaker (column 1, lines 64-67; column 2, lines 1-4; column 4, lines 12-25 and 35-

46).

Claim Rejections - 35 USC § 103

5.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

Claim Rejections - 35 USC § 112

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> The specification shall conclude with one or more claims particularly pointing out and distinctly
> claiming the subject matter which the applicant regards as his invention.

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and indicates that Uehara teaches determining a user's position from captured image of

the speaker (column 1, lines 64-67; column 2, lines 1-4; column 4, lines 12-25 and 35-

46).

Claim Rejections - 35 USC § 103

5.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6.   Claims 1-4, 6-11, 13-17, 29 and 30 rejected under 35 U.S.C. 103(a) as being

unpatentable over Edwards et al (U S 6,545,706 B1) in view of Abdel-Mottaleb et al (U

S 6,263,113 B1).

Regarding claim 1, Edwards discloses system, method and article of

manufacture for tracking a head of a camera-generated of a person comprising:

detecting a color characteristic (column 8, lines 24-27);

detecting motion (column 7, lines 43-47).

However, Edwards is silent about specific details regarding the step of:

removing the flesh color from the captured video.

In the same field (face detection) of endeavor, however, Abdel-Mottaleb discloses

method for detecting a face in a digital image comprising removing the flesh color from

the captured video (see abstract and column 3, lines 62-66).

It would have been obvious to a person of ordinary skill in the art at the time the

invention was made to use the step of removing the flesh color from the captured video

as taught by Abdel-Mottaleb in the system of Edwards because Abdel-Mottaleb

provides Edwards a face detection system which is useful for security systems, criminal

identifications, digital image capturing and teleconferences. In a security system, for

example it is useful to detect the facial portions of an image being viewed so that an

operator of the system can discern whether a human is present in the image and also

this method provides a digital image composed of a plurality of pixels and producing

binary image from the digital image by detecting skin colored pixels. This method includes removing pixels corresponding to edges in the luminance component thereby producing binary image components.

Regarding claim 2, Edwards discloses system, method and article of manufacture for tracking a head of a camera-generated of a person including controlling a processor-based system based on the detection of flesh color and the detection of a shape associated with a human being (column 4, lines 51-55 and column 8, lines 46-53).

Regarding claim 3, Edwards discloses system, method and article of manufacture for tracking a head of a camera-generated of a person including determining whether to process image data depending on whether both motion and flesh color are detected (column 7, lines 43-47 and column 8, lines 46-56).

Regarding claim 4, Edwards discloses system, method and article of manufacture for tracking a head of a camera-generated of a person including capturing a frame of video at a time, and determining after capturing each frame whether or not flesh color has been detected (column 6, lines 37-41 and column 10, lines 11-18).

Regarding claim 6, Edwards discloses system, method and article of manufacture for tracking a head of a camera-generated of a person moving an animation object while capturing video and removing the detected flesh color from the captured video (column 5, lines 41).

However, Edwards is silent about specific details regarding the step of:

removing the flesh color from the captured video.

In the same field (face detection) of endeavor, however, Abdel-Mottaleb discloses method for detecting a face in a digital image comprising removing the flesh color from the captured video (see abstract and column 3, lines 62-66).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use the step of removing the flesh color from the captured video as taught by Abdel-Mottaleb in the system of Edwards because Abdel-Mottaleb provides Edwards a face detection system which is useful for security systems, criminal identifications, digital image capturing and teleconferences. In a security system, for example it is useful to detect the facial portions of an image being viewed so that an operator of the system can discern whether a human is present in the image and also this method provides a digital image composed of a plurality of pixels and producing binary image from the digital image by detecting skin colored pixels. This method includes removing pixels corresponding to edges in the luminance component thereby producing binary image components.

Regarding claim 7, Edwards discloses system, method and article of manufacture for tracking a head of a camera-generated of a person including capturing video of an animation object in a plurality of different positions and automatically removing an image of a user's hand from the captured video (column 2, lines 12-18 and 41-52).

Claim 8, is similarly analyzed as claims 1 above.

Claim 9, is similarly analyzed as claims 2 above.

Claim 10, is similarly analyzed as claims 3 above.

Claim 11, is similarly analyzed as claims 4 above.

Claim 13, is similarly analyzed as claims 7 above.

Regarding claim 14, Edwards discloses system, method and article of manufacture for tracking a head of a camera-generated of a person comprising:

a processor (fig. 1 element 110 and column 4, lines 51-56).

a storage coupled (fig. 1 element 120 and column 4, lines 51-56) to said processor-storing instructions that enable the processor to detect motion (column 3, lines 14-16) and a color characteristic (column 8, lines 24-27) and remove the color characteristic from captured video.

However, Edwards is silent about specific details regarding the step of:

remove the color characteristic from the captured video.

In the same field (face detection) of endeavor, however, Abdel-Mottaleb discloses method for detecting a face in a digital image comprising remove the color characteristic from the captured video (see abstract and column 3, lines 62-66).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use the step of removing the flesh color from the captured video as taught by Abdel-Mottaleb in the system of Edwards because Abdel-Mottaleb provides Edwards a face detection system which is useful for security systems, criminal identifications, digital image capturing and teleconferences. In a security system, for example it is useful to detect the facial portions of an image being viewed so that an operator of the system can discern whether a human is present in the image and also this method provides a digital image composed of a plurality of pixels and producing

binary image from the digital image by detecting skin colored pixels. This method includes removing pixels corresponding to edges in the luminance component thereby producing binary image components.

Claim 15, is similarly analyzed as claims 2 above.

Claim 16, is similarly analyzed as claims 3 above.

Regarding claim 17, Edwards is silent about specific details regarding the step of:

a digital imaging device coupled to said processor (column 3, lines 62-67 and column 5, lines 25-44).

In the same field (face detection) of endeavor, however, Abdel-Mottaleb discloses method for detecting a face in a digital image comprising remove the color characteristic from the captured video (see column 6, lines 20-27).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use the step of a digital imaging device as taught by Abdel-Mottaleb in the system of Edwards because Abdel-Mottaleb provides Edwards a face detection system which is useful for security systems, criminal identifications, digital image capturing and teleconferences. In a security system, for example it is useful to detect the facial portions of an image being viewed so that an operator of the system However, Edwards is silent about specific details regarding the step of: However, Edwards is silent about specific details regarding the step of:can discern whether a human is present in the image and also this method provides a digital image composed of a plurality of pixels and producing binary image from the digital image by detecting

skin colored pixels. This method includes removing pixels corresponding to edges in the luminance component thereby producing binary image components.

Regarding claim 29, Edwards is silent about specific details regarding the step of:

determining areas that are moving a particular color.

In the same field (face detection) of endeavor, however, Abdel-Mottaleb discloses method for detecting a face in a digital image comprising the step ofdetermining areas that are moving a particular color (see column 3, lines 49-65).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use the step of determining areas that are moving a particular color as taught by Abdel-Mottaleb in the system of Edwards because Abdel-Mottaleb provides Edwards a face detection system which is useful for security systems, criminal identifications, digital image capturing and teleconferences. In a security system, for example it is useful to detect the facial portions of an image being viewed so that an operator of the system can discern whether a human is present in the image and also this method provides a digital image composed of a plurality of pixels and producing binary image from the digital image by detecting skin colored pixels. This method includes removing pixels corresponding to edges in the luminance component thereby producing binary image components.

Regarding claim 30, Edwards is silent about specific details regarding the step of:

identifying objects that are connected to moving objects of a particular color.

In the same field (face detection) of endeavor, however, Abdel-Mottaleb discloses method for detecting a face in a digital image comprising the step of identifying objects that are connected to moving objects of a particular color (see column 3, lines 49-65). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use the step of identifying objects that are connected to moving objects of a particular color as taught by Abdel-Mottaleb in the system of Edwards because Abdel-Mottaleb provides Edwards a face detection system which is useful for security systems, criminal identifications, digital image capturing and teleconferences. In a security system, for example it is useful to detect the facial portions of an image being viewed so that an operator of the system can discern whether a human is present in the image and also this method provides a digital image composed of a plurality of pixels and producing binary image from the digital image by detecting skin colored pixels. This method includes removing pixels corresponding to edges in the luminance component thereby producing binary image components.

7.   Claims 18, 20-27 rejected under 35 U.S.C. 103(a) as being unpatentable over Ippolito et al (U S 6,072,522) in view of Uehara et al (U S 4,961,177).

Regarding claim 18, Ippolito discloses video conferencing system for group video conferencing comprising:

capturing a video image of a speaker (column 13, lines 46-52);

receiving audio information from the speaker through at least one microphone(Column 5, lines 30-40).

However, Ippolito is silent about specific details regarding the steps of:

determining the user's position using said captured video image of said speaker; and,

based on the user's position, adjusting a characteristic of the microphone.

In the same field of endeavor, however, Uehara discloses a method and system for inputting a voice through a microphone comprising the steps of:

determining the user's position using said captured video image of said speaker; (column 1, lines 64-67; column 2, lines 1-4; column 4, lines 3-25 and 35-46); and,

based on the user's position, adjusting a characteristic of the microphone (column 3, lines 28-32).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use the steps of user's position and adjusting microphone as taught by Uehara in the system of Ippolito because Uehara provides Ippolito a system which can collect voice data from a person at a high S/N ratio without impairing the usefulness and operability of the voice input system.

Regarding claim 20, Ippolito is silent about the method wherein including tracking the user's facial position in two dimensions and estimating the user's facial position in a third dimension.

In the same field of endeavor, however, Uehara discloses a method and system for inputting a voice through a microphone comprising the steps of:

tracking the user's facial position in two dimensions and estimating the user's facial position in a third dimension (column 4, lines 12-22).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use the step of tracking the user's facial position in three dimensions as taught by Uehara in the system of Ippolito because Uehara provides Ippolito a system which can collect voice data from a person at a high S/N ratio without impairing the usefulness and operability of the voice input system.

Regarding claim 21, Ippolito is silent about the method wherein including tracking the user's facial position in three dimensions.

In the same field of endeavor, however, Uehara discloses a method and system for inputting a voice through a microphone comprising the steps of:

tracking the user's facial position in three- dimensions (column 4, lines 12-22).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use the step of tracking the user's facial position in three dimensions as taught by Uehara in the system of Ippolito because Uehara provides Ippolito a system which can collect voice data from a person at a high S/N ratio without impairing the usefulness and operability of the voice input system.

Regarding claim 22, Ippolito is silent about the method wherein including using a point of source filter to adjust the audio information received from the user and providing said adjusted audio information to a speech recognition engine.

In the same field of endeavor, however, Uehara discloses a method and system for inputting a voice through a microphone comprising the step of:

adjusted audio information (column 4, lines 23-35 and column 5, lines 5-15).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use the step of adjusted audio information as taught by Uehara in the system of Ippolito because Uehara provides Ippolito a system which can collect voice data from a person at a high S/N ratio without impairing the usefulness and operability of the voice input system.

Claim 23, is similarly analyzed as claims 18 above.

Regarding claim 24, Ippolito discloses the system wherein including a pair of video cameras for capturing an image of said user (fig. 11 element 130 and column 4, lines 9-24; column 15, lines 47-52).

Claim 25, is similarly analyzed as claims 20 above.

Claim 26, is similarly analyzed as claims 21 above.

Claim 27, is similarly analyzed as claims 22 above.

8.   Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ippolito et al (U S 6,072,522) and Uehara et al (U S 4,961,177) as applied to claims 18 and 23 above, and further in view of Salisbury (U S 5,917,775).

Regarding claim 19, Ippolito and Uehara are silent about the method wherein including receiving audio information from a pair of microphones and adjusting the sensitivity of the microphones based on the relative positioning of the user with respect to each microphone.

In the same field of endeavor, however, Salibury discloses adjusting the sensitivity of the microphone based on the relative positioning of the user with respect to each microphone (column 4, lines 33-39).

It would have been obvious to a person of ordinary skill in the art at the time the

invention was made to use adjusting the sensitivity of the microphone based on the

relative positioning of the user with respect to each microphone as taught by Salisbury

in the system of Ippolito because Salisbury provides Ippolito a system which a

microphone for detecting pre-set sensitivity levels and the system is capable to

detecting the discharge of a firearm and transmitting an alerting signals to a

predetermined location of discharge.

Claim Rejections - 35 USC § 102

9.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10.   Claims 18, 20-23, 25-27 are rejected under 35 U.S.C. 102(b) as being

anticipated by Uehara et al (U S 4,961,177).

Regarding claim 18, Uehara discloses a system for inputting a voice through a

microphone comprising:

capturing a video image of a speaker (fig. 2 element 22 and column 2, lines 60-

62);

receiving audio information from the speaker through at least one

microphone(fig. 2 element 12 and column 2, lines 60-62).

However, Ippolito is silent about specific details regarding the steps of:

determining the user's position using said captured video image of said speaker;

(column 2, lines 62-65; fig. 3); and,

based on the user's position, adjusting a characteristic of the microphone

(column 3, lines 1-11 and 28-32).

Regarding claim 20, Uehara discloses a system for inputting a voice through a

microphone including tracking the user's facial position in two dimensions and

estimating the user's facial position in a third dimension (column 4, lines 12-22).

Regarding claim 21, Uehara discloses a system for inputting a voice through a

microphone including tracking the user's facial position in three dimensions (column 4,

lines 12-22).

Regarding claim 22, Uehara discloses a system for inputting a voice through a

microphone including using a point of source filter to adjust the audio information

received from the user and providing said adjusted audio information to a speech

recognition engine (column 4, lines 23-35 and column 5, lines 5-15).

Claim 23, is similarly analyzed as claims 18 above.

Claim 25, is similarly analyzed as claims 20 above.

Claim 26, is similarly analyzed as claims 21 above.

Claim 27, is similarly analyzed as claims 22 above.

Claim Rejections - 35 USC § 102

11.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

12.   Claim 28 is rejected under 35 U.S.C. 102(e) as being anticipated by Edwards et al (U S 6,545,706 B1).

Regarding claim 28, Edwards discloses a method and apparatus for personal detection and tracking comprising;

identifying a color (column 2, lines 41-52);

identifying motion (column 3, lines 5-13);

using identified color (column 2, lines 41-52); and motion (column 3, lines 5-13) to implement background segmentation (column 14, lines 20-22).

Other prior art cited

13.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Girod (6,483,532 B1) disclose a video-assisted audio signal processing system and method.

Correa (6,024,337) disclose a computer monitor utility assembly.

Drumm (5,426,450) disclose hands-free hardware keyboard.

Contact Information

14.   Any inquiry concerning this communication or earlier communications from the Examiner should be directed to ABOLFAZL TABATABAI whose telephone number is (703) 306-5917.

The Examiner can normally be reached on Monday through Friday from 9:30 a.m. to

7:30 p.m. If attempts to reach the examiner by telephone are unsuccessful, the

Examiner's supervisor, Mehta Bhavesh M, can be reached at (703) 308-5246. The fax

phone number for organization where this application or proceeding is assigned is (703)

872-9306.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for published

applications may be obtained from either Private PAIR or Public PAIR. Status

information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

Abolfazl Tabatabai

Patent Examiner

Group Art Unit 2625

June 9, 2004

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